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Resilience, Burnout, and Wellbeing in UK Pharmacists during the COVID-19 Pandemic: A Longitudinal Analysis

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ABSTRACT

The global COVID-19 pandemic imposed substantial extra demands on healthcare systems. Yet, the consequences of this ongoing and fluctuating strain on pharmacists' wellbeing, burnout levels, and resilience have not been investigated in depth. To assess variations over time in resilience, burnout, and wellbeing among pharmacists, tracking from June 2020 through March 2021. An electronic questionnaire was shared via social media platforms during June/July 2020. Eligibility extended to all UK pharmacists engaged in patient-contact positions (in community, general practice, or hospital settings). At the questionnaire's conclusion, participants could supply an email address to receive subsequent surveys, distributed in October/November 2020 and February/March 2021. The instruments featured established measures for resilience (CD-RISC 10), burnout (OLBI), and wellbeing (transformed SWEMWBS). Open-ended text fields captured insights on obstacles encountered, beneficial adjustments to professional routines, and assistance required. Initial data comprised 202 submissions in June/July 2020. Among the 145 who opted in for continuation, 87 participated in October/November 2020, and 85 in February/March 2021. Baseline averages from June/July 2020 revealed pharmacist wellbeing (transformed SWEMWBS 21.5) and resilience (CDRISC-10 26.8) falling short of typical population benchmarks, coupled with substantial burnout (OLBI 40.4). Scores remained largely unchanged across periods, reflecting enduring deficits in wellbeing and resilience alongside persistent burnout vulnerability. By February/March 2021, individuals with longer post-registration experience displayed improved wellbeing and resilience alongside reduced burnout. Across the investigation, respondents highlighted various stressors such as intense workloads, patient pressures, insufficient scheduled rest periods, and suboptimal leadership at local and national levels. Peer assistance emerged as the primary effective mechanism for handling these pressures. The findings highlight the challenges and effects of sustained exposure to high-stress environments for pharmacists in the UK.

Keywords: Resilience, Burnout, Stress, Pharmacy, Covid-19, Burnout

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Introduction

From the outset of the COVID-19 pandemic, pharmacists have been essential contributors, collaborating with other healthcare staff amid exceptional challenges. Their responsibilities expanded swiftly to encompass tasks like administering public health measures, managing medication distribution, and enacting new guidelines [1]. One UK-based survey on pharmacist wellbeing from October/November 2020 indicated that 33% described their mental health as poor, with 72% noting adverse effects from work on their overall mental health and wellbeing [2].

This investigation employed the ABC-X model of stress and resilience [3] to frame how pharmacists perceived the crisis of operating during a pandemic (A) through their cognitive appraisal (C), the coping resources they drew upon (B), the resulting stress levels (or lack thereof) (X), and the outcomes: successful adaptation, reversion to prior states, or cumulative strain **(Figure 1)**. Such cumulative strain is alternatively known as “burnout,” portrayed in the model as a complex occupational syndrome stemming from extended job-related tension. Burnout is

characterised as a 'syndrome of emotional exhaustion, depersonalization, and a sense of low personal accomplishment that leads to decreased effectiveness at work' [4]. In healthcare settings, pronounced burnout carries significant risks, including correlations with greater frequencies of clinical mistakes and diminished patient safety [5]. It is further connected to elevated rates of employee attrition [6].

Resilience refers to the capacity for "bouncing back from adversity" and is viewed as a fluid trait that shifts with personal and environmental influences [7]. It can be assessed both personally for each pharmacist and systemically within organisations. Research indicates that robust organisational backing is crucial for fostering strong individual professional resilience [8].

The primary goal of this work was to track changes in pharmacists' resilience, wellbeing, and burnout over the course of the COVID-19 pandemic. Monitoring the same cohort across a 10-month span facilitated the detection of developing trends or modifications in perspectives and operational approaches, potentially guiding long-term enhancements.

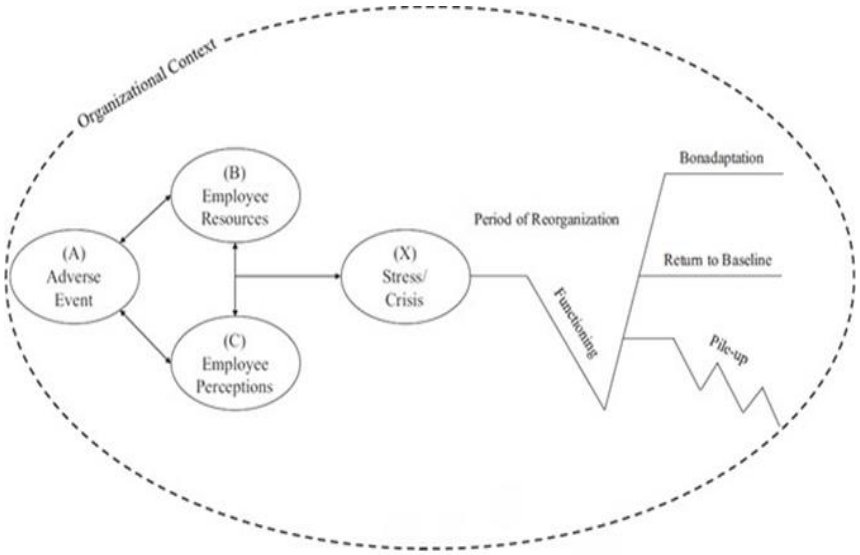

Figure 1. Adapted ABC-X model of stress applied to illustrate the mechanisms underlying employee resilience in this research [3]

Materials and Methods

A longitudinal cohort design with repeated measures was employed, involving three phases of data gathering from June 2020 to March 2021. The initial phase targeted UK pharmacists in patient-facing positions and was promoted through social media channels. Participants who finished the first phase were requested to provide consent for invitations to later phases, conducted in October/November 2020 (phase 2) and February/March 2021 (phase 3).

Each data collection phase aligned with distinct stages of the COVID-19 pandemic in the UK, reflecting variations in reported cases, hospitalisations, fatalities, lockdown measures, and the rollout of vaccinations [9]. The initial questionnaire (available from 8th June to 17th July 2020) coincided with the UK emerging from the first wave of infections, while numerous restrictions remained in place [9]. The second questionnaire (available from 27th October to 24th November 2020) occurred near the start of a second lockdown, featuring regional tier systems and rising COVID-19 hospital admissions. The third questionnaire (available from 23rd February to 26th March 2021) captured the declining phase of the peak wave of hospital admissions, a rapid increase in first-dose vaccinations, and the lifting of the third lockdown.

Data collection

The electronic questionnaires were administered via JISC Online Surveys®. Each questionnaire consisted of four parts. The opening part included three established instruments assessing resilience, burnout, and wellbeing: the Connor-Davidson Resilience Scale© (CD-RISC 10), Oldenburg Burnout Inventory© (OLBI), and Short Warwick-Edinburgh Mental Well-Being Scale© (SWEMWBS) [10-12]. The following part featured four open-ended items, allowing participants to detail their greatest workplace difficulties, any beneficial modifications to

their professional routines, the most helpful forms of workplace support, and additional remarks. The third part collected demographic details, including practice sector, years since qualification as a pharmacist, gender, and caring duties. The closing part of the first questionnaire sought consent for re-contact regarding participation in subsequent phases (two and three).

The second and third questionnaires were similarly hosted on JISC Online Surveys®, with participants providing a unique identifier to link responses across phases. They repeated the first and second parts (validated instruments and open-text items), completing the third part only if demographic information (e.g., work environment) had altered since the prior submission.

Analysis of qualitative data

Open-text responses were transferred to Microsoft Excel for thematic analysis using both inductive and deductive approaches guided by the ABC-X model of stress **(Figure 1)**. Responses were first coded inductively. These codes were subsequently organised according to the ABC-X framework, yielding four primary themes: stressors, appraisals, resources, and organisational elements. To reduce potential bias, an independent researcher uninvolved in data gathering assigned inductive codes across all three phases. Following coding and grouping, another member of the main research team reviewed the codes and themes; discrepancies were resolved through discussion and consensus. Content analysis was performed to count mentions per participant (mpp) of central ideas, facilitating frequency comparisons across phases.

Analysis of quantitative data

Data from Jisc Online Surveys® were imported into IBM SPSS Statistics for Windows®, version 25, for descriptive and inferential statistical processing. Responses to Likert-scale and demographic items were treated as categorical variables and described using percentages and frequencies.

Results and Discussion

In phase 1, 202 pharmacists participated. Among the 145 who agreed to follow-up contact, 88 completed phase 2 and 86 completed phase 3 **(Table 1)**. Participant demographics are shown in **Table 2**, and years since registration as a pharmacist in **Table 3**. To evaluate potential non-response bias, initial demographic and score comparisons were made. No notable differences emerged between those completing all three phases and others, regarding baseline scores or demographics ($p>0.05$).

Table 1. Response rates for the three survey rounds

Survey round / date	Responses received	Excluded	Final count for analysis	Notes on exclusions
1: June/July 2020	202	3	199	2 were not patient-facing; 1 was not in the UK
2: October/November 2020	88/145 (61%)	1	87	Change of role meant the respondent was no longer patient-facing
3: February/March 2021	86/145 (59%)	4	82	2 had been excluded from round 1 but responded in round 3; 1 changed role and was no longer patient-facing; 1 submitted two responses, so only the first was used

Table 2. Demographic information of participants, showing number who completed each question at each survey point. Note that demographics were assumed to be unchanged from round 1 unless the participant indicated otherwise.

Characteristic	June/July 2020 (n=199)	October/November 2020 (n=87)	February/March 2021 (n=82)
Location of main job	(n=195)	(n=87)	(n=80)
England	141 (72%)	63 (72%)	60 (75%)
Wales	38 (20%)	15 (17%)	14 (18%)
Northern Ireland	8 (4%)	4 (5%)	4 (5%)
Scotland	8 (4%)	5 (6%)	2 (3%)
Sector	(n=197)	(n=86)	(n=78)

Community	56 (28%)	18 (21%)	17 (22%)
GP practice	10 (5%)	3 (4%)	2 (3%)
Hospital	111 (56%)	55 (64%)	50 (64%)
Other*	13 (7%)	7 (8%)	5 (6%)
Split role*	7 (4%)	3 (4%)	4 (5%)
Employment status	(n=197)	(n=85)	(n=77)
Business owner	3 (2%)	1 (1%)	1 (1%)
Employee	186 (94%)	82 (97%)	74 (96%)
Self-employed	6 (3%)	2 (2%)	2 (3%)
Locum	2 (1%)	0	0
Working hours	(n=197)	(n=86)	(n=78)
Full-time	133 (68%)	58 (67%)	50 (64%)
Part-time	60 (30%)	24 (28%)	25 (32%)
Variable	2 (1%)	3 (4%)	2 (3%)
Other	2 (1%)	1 (1%)	1 (1%)
Gender*	(n=198)	(n=86)	(n=81)
Female	149 (75%)	66 (77%)	65 (80%)
Male	49 (25%)	20 (23%)	16 (20%)
Caring for dependents at home	(n=192)	–	–
Yes	84 (44%)	–	–
No	108 (57%)	–	–

Table 3. Year of registration as pharmacist. Note that demographics were assumed to be unchanged from round 1 unless the participant indicated otherwise.

Year of registration as pharmacist	June/July 2020 (n=199)	October/November 2020 (n=87)	February/March 2021 (n=82)
Number included	(n=197)	(n=87)	(n=82)
Range	1979–2020	1979–2019	1979–2019
Median	2006	2007	2005
Mode	2016	2013	2017
Before 1970	0	0	0
1970–1979	2 (1%)	1 (1%)	1 (1%)
1980–1989	26 (13%)	10 (11%)	9 (11%)
1990–1999	44 (22%)	18 (21%)	21 (26%)
2000–2009	50 (25%)	26 (30%)	27 (33%)
2010–2015	38 (19%)	16 (18%)	12 (15%)
2016 or later	37 (19%)	17 (20%)	13 (16%)

Scores from the three validated instruments are displayed in **Table 4**. Since the short version of WEMWBS was applied, scores were converted per official guidelines to enable comparisons with studies employing the full scale [12]. The OLBI includes two subscales—disengagement and exhaustion [11]—presented together with the total score.

Longitudinal analysis of scores

Sixty-six participants submitted responses for all three phases. Repeated-measures ANOVA was applied to these data across the three time points. Average scores for SWEMWBS (n=64, p=0.708), CD-RISC-10 (n=65, p=0.259), OLBI total (n=61, p=0.328), OLBI exhaustion subscale (n=63, p=0.161), and OLBI disengagement subscale (n=62, p=0.550) exhibited no statistically significant variation throughout the study duration (n=66, p>0.05).

Paired score comparisons

From the starting pool of 199 qualified participants, 103 additionally submitted responses for round 2 and/or round 3. Wilcoxon signed-rank tests were conducted to evaluate personal score changes between rounds 1 and 2, 2 and 3, and 1 and 3, given the non-normal data distribution. Median values for wellbeing and resilience trended downward from round 1 through rounds 2 and 3, but the sole significant shift was in transformed SWEMWBS scores from round 1 to round 2 (Z=-2.074, p=0.038), with medians of 22.35 (round 1) and 21.54 (round 2). Regarding burnout, notable increases appeared in overall OLBI scores from round 1 to round 2 (Wilcoxon signed-rank, Z=-2.408, p=0.016), medians 39 (round 1) and 41 (round 2), and in the exhaustion subscale from round 1 to round 2 (Wilcoxon signed-rank, Z=-2.773, p=0.006), medians 21 (round 1) and 22 (round 2).

Group comparisons

Wellbeing: No meaningful variations were detected based on gender, practice sector, or overall experience. However, in round 3, those qualified as pharmacists in 1999 or before showed markedly higher wellbeing levels than individuals qualified between 2010 and 2015 (p=0.019).

Resilience: Round 1 revealed variations by gender (males displayed higher resilience, p=0.048, Mann-Whitney two-tailed) and by practice sector (individuals in combined roles had elevated resilience compared to community (p=0.024), general practice (p=0.01), or hospital (p=0.015) settings, Mann-Whitney two-tailed), although group sizes for combined roles and general practice were small, leading to broad confidence intervals. Such patterns were absent in rounds 2 and 3. In round 3 only (not previous ones), experience influenced outcomes (Mann-Whitney

Table 4. Scores for the three scales at each survey round: SWEMWBS measured wellbeing, CD-RISC-10 resilience and OLBI burnout.

Measure	June/July 2020		October/November 2020		February/March 2021	
	Range	Mean (SD)	Range	Mean (SD)	Range	Mean (SD)
Transformed SWEMWBS (n=198 / 87 / 82)	7–32.55	21.5 (SD=3.4)	16.36–29.31	21.3 (SD=2.8)	14.08–29.31	21.43 (SD=3.0)
CD-RISC-10 (n=198 / 88 / 82)	0–40	26.8 (SD=6.5)	10–40	25.9 (SD=6.4)	4–39	25.9 (SD=6.6)
Oldenburg Burnout Inventory (OLBI) (n=191 / 84 / 82)	20–60	40.4 (SD=7.4)	25–59	41.0 (SD=6.2)	26–63	40.3 (SD=8.2)
OLBI Disengagement (n=194 / 86 / 82)	9–31	19.3 (SD=4.2)	11–28	19.1 (SD=3.3)	11–32	19.0 (SD=4.3)
OLBI Exhaustion (n=195 / 85 / 82)	10–31	21.1 (SD=4.0)	9–31	21.9 (SD=3.7)	9–31	21.3 (SD=4.6)

two-tailed), with pre-2000 qualifiers (1999 or earlier) exhibiting substantially greater resilience than those from 2000-2009 (p=0.046) or 2010-2015 (p=0.034).

Burnout: During round 1, pharmacists in community settings reported elevated overall burnout and disengagement compared to hospital counterparts (p=0.008 and p<0.0005, two-tailed unpaired t-test), yet these distinctions vanished in rounds 2 and 3. For experience levels, pre-2000 qualifiers (1999 or earlier) recorded reduced overall burnout, exhaustion, and disengagement in round 3 relative to later qualification groups **(Table 5)**.

Table 5. Burnout scores for round 3 on basis of year of registration (Mann-Whitney two-tailed)

Cohort by registration year	2016–2020	2010–2015	2000–2009	1999 or earlier
OLBI total mean (95% CI)	43.62 (38.8–43.4)	44.17 (39.6–48.7)	40.81 (37.8–43.9)	36.83 (33.8–39.9)
p-value vs 1999 or earlier	0.019	0.005	0.032	–
OLBI exhaustion mean (95% CI)	22.46 (19.8–25.1)	23.33 (20.7–25.9)	21.78 (20.2–23.4)	19.63 (17.7–21.5)
p-value vs 1999 or earlier	0.051	0.012	0.041	–

OLBI disengagement mean (95% CI)	21.15 (18.5–23.8)	20.83 (18.6–23.1)	19.04 (17.3–20.8)	17.20 (15.9–18.5)
p-value vs 1999 or earlier	0.007	0.007	Not significant	–

Qualitative review of open-text responses

Content analysis across the four themes (stressors, appraisals, resources, and organisational aspects) highlighted the occurrence and evolution of major concepts/codes throughout the rounds **(Table 6)**.

Table 6. Content analysis of free-text qualitative comments

Theme	Round 1 (June/July 2020)	Round 2 (October/November 2020)	Round 3 (February/March 2021)
Stressors			
Work environment	0.61 (n=117/195)	0.49 (n=43/87)	0.35 (n=28/80)
PPE	0.19 (n=38/195)	0.07 (n=6/87)	0.02 (n=2/80)
Working from home	0.09 (n=18/195)	0.10 (n=9/87)	0.08 (n=6/80)
Supporting colleagues	0.07 (n=14/195)	0.05 (n=4/87)	0.07 (n=6/80)
Negative work atmosphere	0.12 (n=23/195)	0.08 (n=7/87)	0.13 (n=10/80)
High workload	0.34 (n=66/195)	0.53 (n=46/87)	0.32 (n=26/80)
Poor patient attitudes	0.17 (n=33/195)	0.04 (n=3/87)	0 (n=0/80)
External stressors	0.06 (n=11/195)	0.05 (n=4/87)	0.06 (n=5/80)
Perceptions			
Concerns about COVID-19 risk	0.07 (n=14/195)	0.18 (n=18/87)	0.04 (n=3/80)
Enhanced skills	0.05 (n=10/195)	0.06 (n=5/87)	0.11 (n=9/80)
Positive experience working in MDT	0.14 (n=27/195)	0.09 (n=8/87)	0.06 (n=5/80)
Feeling appreciated	0.06 (n=11/195)	0.05 (n=4/87)	0.13 (n=10/80)
No positives reported	0.22 (n=43/195)	0.37 (n=32/87)	0.10 (n=8/80)
Unable to switch off	0.03 (n=6/195)	0.10 (n=9/87)	0.06 (n=5/80)
Resources			
Flexible working arrangements	0.08 (n=16/195)	0.03 (n=3/87)	0.03 (n=2/80)
Supportive intra-professional team	0.22 (n=43/195)	0.19 (n=17/87)	0.16 (n=13/80)
Organisational factors			
Lack of protected breaks	0.31 (n=61/195)	0.25 (n=22/87)	0.30 (n=24/80)
Lack of protected study time	0.02 (n=4/195)	0.07 (n=6/87)	0.09 (n=7/80)
Supportive local management	0.06 (n=12/195)	0.10 (n=9/87)	0.04 (n=3/80)
Poor local management	0.18 (n=35/195)	0.24 (n=21/87)	0.10 (n=8/80)
Being short-staffed	0.17 (n=33/195)	0.34 (n=30/87)	0.40 (n=32/80)
Poor national management	0.10 (n=20/195)	0.07 (n=6/87)	0.06 (n=5/80)
Post-stress trajectory			
Positive adaptation	0.03 (n=5/195)	0.10 (n=9/87)	0.16 (n=13/80)
Burnout	0.07 (n=13/195)	0.22 (n=19/87)	0.29 (n=23/80)

Stressors

Respondents outlined diverse sources of pressure, covering workplace conditions, escalated demands, hostile patient interactions, and outside influences.

Work environment

Concerns about the workplace setting featured as a pressure point in every round, peaking in mentions during round 1 **(Table 6)**. These encompassed colleague distancing rules, changes to pharmacy design and operations, hygiene protocols, remote working, and a tense or unfavourable team dynamic.

Distancing measures greatly amplified job-related tension, with reports of hindered patient interactions and eroded colleague support systems, including shared breaks or meals.

During June/July 2020, those in community settings often cited anxiety from excessive patient numbers indoors or lengthy external queues. Many indicated that signage capping indoor occupancy helped ease this somewhat.

Only having to deal with one or two customers in the shop at one time makes me feel less stressed. Female, Community pharmacist. Round 1

Introducing enhanced hygiene practices, especially sustained PPE usage, ranked high among pressures. Several individuals described intense discomfort, feelings of confinement, or heightened anxiety from long-term wear. Hospital-based respondents dreaded ward shifts due to time-consuming PPE procedures. Community participants in round 1 stressed shortages or poor-quality PPE. Communication barriers with patients and team members while masked were also common complaints. By round 3, adaptation had reduced these issues noticeably **(Table 6)**.

Remote working drawbacks included unsuitable home offices, limited space, or absent proper tools/software. Isolation was widespread, prompting desires to resume onsite work for interaction. Many felt powerless from lower team involvement and struggled with work-life separation, preventing true downtime.

It's harder to deal with difficult phone calls to patients when working at home, it's harder to leave the stress behind at work and I realise I would often talk it out with colleagues. Female, GP pharmacist. Round 1

A persistent issue was the dual load of self-management alongside aiding overwhelmed or fatigued nearby colleagues. Participants recognised varied personal impacts from the pandemic on team members, often spilling into a detrimental workplace vibe. This improved by round 3 **(Table 6)**, tied by respondents to growing optimism from vaccine progress and lockdown exit plans.

I felt more optimisitic [sic] about 2021/22 - in particular a belief that things will return to near normal. Male, Hospital pharmacist. Round 3

Increased demands

Heavy task burdens consistently ranked as one of the most prominent pressures affecting respondents over the entire duration of the study **(Table 6)**. The specific triggers for these demands changed between phases and involved several interconnected elements. During the first phase, the main contributor was a sharp rise in patient prescription needs within community and primary care practices. The second phase was dominated by the intense management of numerous COVID-19 admissions in hospital environments. In the final phase, the primary source shifted to the extensive delivery of COVID-19 vaccines.

Many also pointed out disparities in how tasks were distributed. Those without family caregiving roles or vulnerable medical conditions frequently mentioned being tasked with additional shifts or filling in for others. Ongoing staffing deficits—arising from COVID-19 illnesses, required quarantines, or mental health absences—worsened the situation. General shortages in the wider healthcare system amplified the load on those present, often making it impossible to complete everything within contracted hours and necessitating extended shifts, including uncompensated ones.

It's exhausting in itself, in addition to covering a couple of wards a day to cover for sickness/absences and feel it is taking a toll on my mental and physical health. It's not sustainable long term. Female. Hospital pharmacist. Round 2

Patient-related elements

The initial phase featured numerous accounts of difficult patient interactions as a central source of tension **(Table 6)**. These involved instances of hostility, rudeness, overbearing requests, and deliberate disregard for protocols on face coverings or physical separation. Experiences were reported in every practice area but predominated in community roles, where practitioners believed it stemmed partly from limited public awareness of their expert clinical functions.

Trying to change patient attitudes towards healthcare and actually tell patients what our actual roles are. We don't just stick a label on a box, we are clinicians and we have a significant part to play in primary care. Male, Community pharmacist Round 1

The middle phase included hospital-based descriptions of the deep emotional toll from unsuccessful treatments and patient deaths in their direct responsibility. The concluding phase saw primary care and hospital staff addressing the strain of caring for individuals whose conditions had severely progressed because of postponed medical visits during earlier stages of the outbreak.

Dealing with increased pressure of having more non covid patients that are really ill as a result of not seeking help earlier. Female, Hospital Pharmacist Round 3

Non-work pressures

While professional responsibilities formed the core of stress, personal and domestic circumstances played a substantial role in overall tension levels for pharmacists, maintaining consistency across phases **(Table 6)**. Key aspects included handling individual health challenges (linked to COVID-19 or unrelated), struggles to mentally disengage from job concerns, family obligations, educating children at home, and enforced limits on gatherings with relatives or friends under distancing regulations.

Managing childcare with no family support. No flexibility from work. No school. No nursery. Home schooling and working. Jealousy of friends on furlough or working from home. Wish I could do the same. Wish I didn't have to come to work in a dangerous place. Female, Hospital Pharmacist. Round 1

Appraisals

Categories for how pharmacists viewed their situation included: evaluation of COVID-19 dangers, alongside optimistic and pessimistic outlooks on continuing practice during the crisis.

COVID-19 danger appraisal

In each phase, participants voiced apprehensions about contracting COVID-19, focused mainly on personal vulnerability but also on potentially passing it to loved ones **(Table 6)**. These fears intensified around October 2020, largely tied to anticipation of another major outbreak. Additional worries covered emerging strains and the fast-paced evolution of events. In general, the unclear direction of the crisis generated lasting concern.

It's hard because we don't know when it [COVID-19 pandemic] will end. Female. Community Pharmacist, Round 1

Optimistic outlooks

Even with the considerable hardships posed by the outbreak, a portion of pharmacists interpreted the circumstances as avenues for self-improvement, deeper clinical participation, and professional enhancement. Such views stood out especially in June/July 2020 and February/March 2021 **(Table 6)**, exemplified by upskilling for areas like critical care support (June 2020), trial participation (October 2020), and immunisation programmes (February 2021). Hospital practitioners valued expanded interactions across multidisciplinary groups, platforms to display broad competencies, and dismantling of established role barriers. A number characterised their involvement as highly gratifying.

We have achieved great things. So I do feel that I am contributing significantly to society and to the health of our population. That has given us all a lift. Male, CCG pharmacist. Round 3

Expressions of greater respect and commendation—from the community, team members, and superiors—surfaced throughout, peaking in the last phase **(Table 6)**. This elevated morale and pride in their field, helping create a more encouraging atmosphere. Specific praise often centred on accomplishments like organising immunisation sites and delivering guidance in the outbreak's early days.

I feel more valued in my work and I feel needed. Which has given me more purpose in my work. Male, Community Pharmacist. Round 3

Pessimistic perspectives

In each of the three phases, the clearest expression of negativity appeared when participants were prompted with "how has your working practice changed in a positive way?", prompting many to respond with phrases like "no positives", "nothing", or "unsure". Such downbeat responses reached their highest frequency in June/July 2020.

Across all phases, many described challenges in detaching from work thoughts and being "unable to properly relax". This difficulty became more pronounced during October/November 2020 and February/March 2021 **(Table 6)**. Remote arrangements frequently caused participants to sense that "work seeped into their personal life" and that they "couldn't escape work", leading to disrupted rest and escalating tension.

It's been an extremely difficult time. I find usually I am much better at coping with work related stress but at the moment, my inability to cope or switch off this stress response is affecting me more. Female Hospital Pharmacist. Round 1

Over the full duration of the study, reduced drive toward professional duties was a recurring theme **(Table 6)**. Several linked this to escalating demands, prolonged shifts, weariness, and seclusion, all of which eroded their enthusiasm to "get up and go to work".

Finding the energy to come into work and put 100% into my daily tasks. I have no motivation to improve services, I just want to get through the day and go home. Female, Hospital pharmacist. Round 1

Coping mechanisms

To address job-related and pandemic-induced pressures, pharmacists relied on diverse strategies, encompassing adaptable schedules, peer networks within the profession, and beneficial elements in their non-work lives.

Adaptable scheduling

The strategy most commonly referenced for mitigating tension was adaptable work patterns **(Table 6)**. Those in hospital roles often noted transitions to compressed schedules, such as three extended shifts followed by three days of rest.

The long days were tiring, but I enjoying having a longer break to rest, recover and forget about work in-between. Male, hospital pharmacist. Round 2

Remote participants highlighted benefits like increased self-direction, reclaimed commuting hours, and lower infection exposure for greater security. Digital platforms supported higher productivity and refined operational flows.

Using Microsoft teams more for meetings is useful and means you can attend meetings from home and in the long term wont [sic] need to travel so much. It has caused us to look at how we manage chemotherapy assessment processes in clinic and which appts we can manage by telephone to reduce pt [patient] appts to hosp. There will be benefits to patients and staff in the long run from how we have changed our processes. Female, Hospital pharmacist, Round 1

Peer-based assistance

Colleague assistance stood out as a key strategy mentioned consistently throughout. Respondents frequently spoke of teams "becoming closer" and developing "increased camaraderie". Support from coworkers was viewed positively across the board **(Table 6)**.

Our team is closer and more confident about what we can achieve and overcome together" Male, Community Pharmacist, Round 2

Numerous individuals appreciated onsite interactions as a valuable outlet for social connection when pandemic rules limited gatherings with family or friends, deriving enjoyment from coworker conversations. This was especially noticeable in October 2020 **(Table 6)**, during a nationwide lockdown. Remote practitioners, however, often cited isolation from missing spontaneous team discussions.

External support systems and pursuits

During the first two phases (June/July 2020 and October/November 2020), some credited close personal ties—with spouses or companions—for aiding decompression. Conversely, certain home-based workers noted friction arising from uninterrupted shared space.

A handful in the earliest phase described leisure pursuits outside work, ranging from mindfulness applications to routine physical activity, as aids for tension relief. These promoted better wellbeing and post-shift recovery, though often paired with irritation over restricted access to retail, dining, and entertainment venues under lockdown protocols.

Organisational factors

Primary organisational aspects impacting pharmacists encompassed safeguarded rest intervals, site-level supervision, and country-wide directives.

Scheduled pauses

In each phase of data collection, pharmacists operating in community locations consistently called for safeguarded, disruption-free meal intervals to secure a meaningful reprieve from relentless professional strains. Regrettably, the majority of these outlets maintained operations through midday, rendering such pauses impractical, and any temporary provisions introduced during the height of initial alarm were frequently rescinded as urgency waned.

Bring back the closure over lunch so everyone gets a proper, uninterrupted break". Female, Community Pharmacist. Round 3.

A substantial number further highlighted the disappearance of ring-fenced periods for career advancement, compulsory instruction, or additional qualifications. Discussions of this loss became increasingly common as the research advanced **(Table 6)**. It was widely regarded as unreasonable to expect completion of such obligations during unpaid hours.

Numerous accounts detailed thwarted attempts to secure leave for vacations, attributed to persistent personnel shortfalls, paired with exasperation over enforced domestic confinement and international travel prohibitions under outbreak controls.

Direct oversight

Across the entire research timeline, the influence of supervisory practices on navigating workplace-induced tension was a recurring focal point. Favourable experiences involved empathetic leaders who maintained regular welfare contacts and displayed genuine comprehension of difficult scenarios. Certain forward-thinking supervisors implemented valued initiatives, including ongoing task reviews and specialised emotional support offerings.

I do have supportive managers and I think that is the most useful thing, so that you can talk through concerns and changes at work. Female, Hospital pharmacist, Round 1

Instances of substandard oversight, however, predominated in feedback **(Table 6)**. Within hospital contexts, repeated grievances centred on ambiguous messaging and inconsistent strategic input from upper management.

Differing opinions, lack of clarity and lack of direction from senior team. Female, GP Pharmacist, Round 1

Those in community practice described unrelenting corporate demands to fulfil income-generating quotas for contracted offerings, notwithstanding amplified outbreak obligations. Emphasis was placed on the fact that such performance imperatives constituted a heavy burden even prior to the health emergency.

Constant communication with head office. Being told weekly that we need to increase script items and OTC sales or there will be a 'discussion' about staffing hours. Male, Community pharmacist, Round 1

Manpower deficiencies were continually pinpointed as a fundamental source of difficulty, gaining greater salience over successive rounds **(Table 6)**. Resulting imbalances amplified workloads for remaining personnel, generating unease regarding potential declines in care standards and elevated hazard exposure.

Lack of staffing means I have to dispense and self check. I try to do this as safely as possible. Female, Community pharmacist, Round 3

A portion of contributors observed that workforce inadequacies represented chronic vulnerabilities predating the outbreak, rendered far more acute by its onset.

The lack of staffing is horrendous. This was a problem before the pandemic and it's even worse now. Male, Community pharmacist, Round 2

Central policy frameworks

An additional prominent challenge lay in interpreting and operationalising successive, rapidly issued governmental protocols amidst already intensified daily responsibilities. This difficulty figured most conspicuously in the second round **(Table 6)**. Frequently proposed enhancements encompassed comprehensive restructuring of health service agreements, removal of medication levies, and provision of unambiguous operational protocols.

It has felt NHS has abandoned pharmacists and done little to protect them versus GPs. Female, Community pharmacist Round 1

Consequences of extended strain

Individuals recounted trajectories spanning effective resilience-building to profound exhaustion resulting from sustained engagement in outbreak-era practice. As evidenced in preceding sections, select participants benefited from constructive atmospheres bolstered by comprehensive assistance, thereby cultivating enhanced capabilities for managing future upheavals.

COVID was a great opportunity to collaborate and learn lots of material in quick succession. It allowed us to think differently and implement services which were highly effective for the team/patients. It enabled my team to develop themselves and become more efficient. Female Community Pharmacist., Round 3

By contrast, the cumulative impact of diverse adversities, constrained mitigating factors, and deficient systemic arrangements precipitated pronounced depletion symptoms—extreme tiredness, sagging collective spirits, and fading commitment—for numerous others. Those affected frequently detailed authorised absences due to psychological strain, deliberations or decisions to depart the field altogether, or relocations to alternative employers, healthcare bodies, or practice domains anticipated to offer superior conditions.

It's got to the point during the worst days during lockdown, that I've seriously considered leaving work mid-way through the day and never coming back to Pharmacy again. Female, Community pharmacist, Round 1

This investigation tracked variations in pharmacists' resilience, burnout, and overall wellbeing over time during the COVID-19 era, covering the interval from June 2020 to March 2021. To evaluate participants' wellbeing (SWEMWBS), resilience (CD-RISC), and burnout (OLBI), three established measurement tools were applied, integrating numerical data with narrative insights to bolster the validity of the conclusions and proposed actions. The narrative evidence reliably aligned with patterns emerging from the numerical analysis in relation to mental health, resilience levels, and both physical and mental dimensions of fatigue.

Across the board, the average SWEMWBS wellbeing scores for pharmacists stayed notably below the UK general population average of 23.5 [13], registering 21.6, 21.3, and 21.3 in the three successive data collection phases. These figures were echoed in the narrative accounts, which portrayed widespread low spirits, pervasive sadness, and a sense of despair. Similarly, average CD-RISC resilience scores for pharmacists were steadily under the general population benchmark of 31.78 [14], showing values of 26.9, 25.9, and 25.9 across the three phases. Narrative responses reinforced this, as respondents highlighted insufficient individual and workplace strategies for maintaining resilience. Average OLBI burnout scores for pharmacists exceeded the population norm of 34.4 [15], with readings of 40.4, 41, and 40.3 over the three phases. The qualitative elements illustrated profound fatigue, emotional detachment, reduced drive, and frequent contemplation of career departure.

Stressors

Key sources of pressure uncovered in this research included workload demands, personal protective equipment (PPE) challenges, and patient behaviour. Escalated and erratic workloads affected multiple pharmacy settings amid the COVID-19 crisis [16, 17], playing a major role in elevating stress among pharmacists. This is particularly alarming given evidence that heavier workloads, time pressure, and frequent disruptions raise error rates and threaten patient safety [18, 19]. Prolonged PPE usage has been linked to reduced clarity in interactions with patients and staff, alongside physical discomfort and heat-related strain [20]. Irregular or insufficient PPE availability has likewise proven to be a significant anxiety trigger [21].

Participants in this research frequently noted the emotional toll and irritation stemming from unfavourable patient conduct, including verbal abuse or discourtesy. One UK-based survey involving 206 pharmacists indicated that 89% encountered unsuitable actions from patients or caregivers tied to medication shortages and limits on non-prescription items [22]. Further research on pharmacists during the pandemic has documented instances of verbal and physical aggression toward staff, along with vandalism to premises [23]. Broadly, awareness among the public regarding the diverse and critical responsibilities of pharmacists appears restricted; enhancing public knowledge about their wide-ranging and indispensable contributions could promote more positive patient perspectives, increased recognition, and optimal engagement with pharmacy services [24].

Pharmacists' perceptions

Pharmacists expressed a range of attitudes toward practising during the COVID-19 pandemic. Many viewed upskilling to meet emerging challenges positively. This aligns with evidence that, in healthcare crises, conventional restrictions on pharmacists' scopes of practice are often lifted, enabling expanded contributions to crisis management [25]. The breakdown of traditional role hierarchies permitted pharmacists to apply their expertise more fully in pandemic efforts, such as establishing vaccination centres.

Views on patient recognition and appreciation varied considerably. For certain pharmacists, expressions of gratitude from patients enhanced job satisfaction and fostered a more favourable work atmosphere. In contrast, others felt undervalued relative to other healthcare workers, resulting in resentment and irritation. Existing research mirrors this divergence, with some investigations indicating heightened patient appreciation for pharmacists [26, 27], while others reveal insufficient recognition of their essential contributions during the COVID-19 era [28].

Fears of contracting COVID-19, especially the risk of transmitting it to family members, significantly heightened pharmacist anxiety. Comparable research identifies this as the primary stressor for healthcare workers amid the pandemic [29]. These concerns were intensified by inadequate PPE supplies (as previously noted), the early and ongoing public exposure of community pharmacies, and their obligation to stay operational throughout the crisis [30].

Resources

Pharmacists employed various strategies to manage elevated stress levels during the pandemic. Remote working was largely regarded as beneficial for work-life balance, as reduced commuting time enabled greater family engagement or pursuit of personal interests. Nevertheless, it presented drawbacks for some, including feelings of isolation and blurred boundaries between professional and personal life, making it difficult to disengage. Evidence suggests remote work can both mitigate and exacerbate stress and psychological health [31-33].

Numerous participants identified robust intra- and inter-professional relationships, along with team solidarity, as valuable coping mechanisms. Supporting literature indicates that fostering effective interprofessional collaboration improves patient outcomes and enhances staff retention [34].

Organisational factors

This study underscores the critical influence of organisational practices on resilience and employee wellbeing, particularly during healthcare emergencies like pandemics. It corroborates reports of reactive adaptations in pharmacies, including modifications to prescribing, supply procedures, staffing arrangements, and operational protocols [35, 36]. Although some pharmacists felt supported by understanding managers, far more described ineffective leadership and systemic flaws that aggravated occupational stress. Parallel research documents pharmacist dissatisfaction with regional guidelines, PPE shortages, and unpreparedness for supply disruptions [23]. These observations reinforce the concept that organisational resilience is fundamental to workforce resilience, surpassing the importance of personal resilience alone [8].

Several participants criticised the UK government's national pandemic response, deeming it ineffective and insufficient. In contrast to local management, no positive remarks were made about national efforts. Issues raised included unclear directives and calls for greater pharmacist autonomy. A related study found that 88% of NHS healthcare workers were dissatisfied with the UK's pandemic preparedness [37].

Post stress trajectory

Many pharmacists reported indicators of chronic stress, emotional withdrawal, exhaustion, and burnout. This corroborates other pharmacy research documenting rises in stress, compromised mental and physical health [38], burnout [39], emotional depletion, depression, and anxiety [40], alongside substantial adverse impacts of COVID-19 on pharmacists' psychological health and wellbeing [41]. Certain participants contemplated exiting the profession—a development that raises alarm, given potential exacerbation of workloads, further stress, and risks to patient safety [42]. Amid existing pharmacist shortages in the UK, retention initiatives are essential [43].

It should be acknowledged that a smaller subset of participants exhibited bonadaptation (positive psychological growth following adversity), though this was markedly less prevalent than burnout. Bonadaptation remains underexplored in healthcare literature, which predominantly emphasises negative outcomes. This study is among the limited works offering pharmacists opportunity to discuss instances of bonadaptation.

Conclusion

Although resilience has historically been viewed as primarily an individual trait, accumulating evidence—including the present work—emphasises the pivotal contribution of organisational resilience within healthcare systems. Applying the ABC-X model of stress illuminates the interrelated dynamics of resilience, revealing how organisational factors predominantly safeguard or undermine pharmacists' wellbeing and resilience. This reinforces the expanding consensus that organisational resilience exerts a stronger influence on staff wellbeing than individual resilience alone. The findings stress the urgency of implementing support measures for pharmacists to preserve their wellbeing, ultimately yielding advantages for the patients under their care.

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